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## ABSTRACT

The current prevailing professional opinion is that the prevalence rates of alcohol abuse among the elderly are low compared to the general population. The prevalence of alcohol abuse among the elderly was examined through a review of the empirical research. This review revealed a number of serious methodological problems. The most important of these was the implicit assumption that older and younger subjects can be compared unequivocally on measures of alcohol abuse. The result is a systematic underestimation of the prevalence of elder alcohol abuse. The studies include a variety of samples from among the elderly non-patient, outpatient, and inpatient populations across the United States (and one non-American study.) Prevalence rates ranged from 0-44 percent. Most of the studies of non-patient samples produced rates at or below 12 percent; for outpatient samples in the mid-teen percentages; and for psychiatric inpatients over 20 percent. There are many developmental changes throughout the aging process that either hide or imitate the symptoms of alcohol abuse. In light of the methodological problems, alcohol abuse is likely a significant problem among the aged. Reliable estimates of the prevalence of this problem are not available. (Author/ABL)

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# PREVALENCE OF ALCOHOL ABUSE AMONG THE ELDERLY

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Presented to

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In Partial Fulfillment

of the Requirements for the Degree

Doctor of Psychology

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by

Paul S. Woodward

May 1988

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PREVALENCE OF ALCOHOL ABUSE AMONG THE ELDERLY

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## ABSTRACT

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Paul S. Woodward

The prevalence of alcohol abuse among the elderly is examined through a review of the empirical research. This review revealed a number of serious methodological problems. The most important of these was the implicit assumption that older and younger subjects can be compared unequivocally on measures of alcohol abuse. The result is a systematic underestimation of the prevalence of elder alcohol abuse. The studies include a variety of samples from among the elderly non-patient, outpatient, and inpatient populations across the United States (and one non-American study). The estimated prevalence rates range widely. In light of the methodological problems, it is concluded that alcohol abuse is likely a significant problem among the aged. However, reliable estimates of the prevalence of this problem are not available.

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### Prevalence of Alcohol Abuse Among the Elderly

The prevalence of alcohol abuse among the elderly is examined in this paper through a review of the empirical research. The current prevailing professional opinion is that prevalence rates of alcohol abuse among the aged are low relative to the general population (Warheit and Auth, 1983; Barnes, 1982). Contrary to the prevailing opinion, some empirical studies reveal high prevalence rates of alcohol problems among older people (Christopherson, Escher, and Bainton, 1984; Brown, 1982). In light of these diverse opinions, it appears that researchers have not established reliable prevalence rates of alcohol abuse among the elderly.

Why is it important to accurately determine the rate of alcohol abuse in the elderly population? There are three reasons that accurate prevalence rates are needed. First, accurate prevalence rates are a necessary prerequisite for determining whether or not treatment of the problem is needed. Alcohol abuse may be prevalent in the elderly population. By assuming that prevalence rates are too low to warrant attention, public health agencies may fail to offer necessary treatment. This would represent a serious disservice to the elderly.

Second, prevalence rates of alcoholism are continually changing among all age groups and there are indications of an increasing incidence of alcohol problems among the elderly. Simon, Eptstein and Reynolds (1968) reported a 60 percent increase in the annual death rate due to alcoholic disorders among adults 20 years and over between 1950 and 1964. They pointed out that the increase was not quite as high among most elderly age-groups. However, the authors made it clear that alcohol problems appear to be killing an increasing number of elderly people. It is worth noting that 60-69 year old women had the greatest increase in deaths due to alcoholic disorders during this fifteen year period. Their increase was 114 percent. While this study is out of date, it indicates that prevalence of alcohol problems are changing. If alcohol abuse is affecting an increasing number of

elderly people, it is necessary to accurately assess the prevalence rates. We must do this so we can make informed decisions about how to address this growing problem.

Third, the elderly population is becoming a greater percentage of the general population. In 1984, Christopherson et al., stated:

The past decade has witnessed a 28 % increase in the number of people in the U.S. aged 65+, and demographers predict that by the year 2000 the number will have increased from the present 25.5 million to more than 30 million. A major societal concern is planning for the needs of the elderly as this segment of the population grows both in real numbers and as a percentage of the total population (p.417).

That is, in addition to the increasing prevalence of alcohol problems among the elderly, there is an increasing number of elderly people. Therefore, higher prevalence rates overlay an increase in the number of elderly people. The increase in alcohol abuse among the elderly affects more people than mere percentage rates might suggest.

In order to discuss the significance of the problem of alcohol abuse among the elderly it will be necessary to determine what level of abuse is "significant". This author will assume that the problem of alcohol abuse in the elderly population is significant if the incidence of this abuse is as high or higher than the incidence of alcohol abuse in the general population. Several estimates of alcohol abuse in the general population are summarized in Table 1. These estimates of prevalence of abuse range from 4.6 percent to 20 percent in various samples representing the general population. An estimated mean of these prevalence rates is 10 or 11 percent. Therefore, alcohol abuse among the elderly will be considered to be a significant problem in this paper if it equals or exceeds the general population rate of 10-11 percent.

This paper consists of two major sections. The first section deals with the methodological problems associated with the studies reviewed in this paper. Empirical studies in the area of alcohol abuse among the elderly are riddled with serious methodological problems. The intent of the discussion of these problems is to inform the reader of the limitations of these studies. The second section, deals with the studies

Table 1. Summary of estimates of prevalence of alcohol abuse in the general population.

| Study                        | Sample                                                      | Findings                                                                                                                                                                                                                    |
|------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Barnes (1982)                | Barnes reviewed a number of empirical studies.              | Average heavy-drinking prevalence= 20%                                                                                                                                                                                      |
| Cahalan (1970)               | 1359 adults from the general population of the U.S.         | Problem-drinking prevalence = 10%<br>[Breakdown by sex:<br>Males (n=751) = 113 (15%)<br>Females (n=608) = 24 (4%)]                                                                                                          |
| Celentano and McQueen (1978) | 2762 subjects representing adult pop. of Washington Co., MD | Average alcoholism prevalence rate...<br>...using direct methods = 11%<br>...using indirect methods = 4.6%                                                                                                                  |
| Gallup Poll (1977)           | General pop. of U.S.                                        | This poll found that 71.5% of the gen. pop. drank alcoholic beverages. Using the formula "one out of ten drinkers becomes an alcoholic" (popular among alcoholism counselors), an alcoholism prevalence of 7% is indicated. |

individually within three general groups. The first group is studies with samples of elderly persons residing in the community (non-patients). The second group includes studies with samples of elderly persons in contact with social service agencies in their communities (outpatients). The third group is composed of studies with samples of hospitalized psychogeriatric patients (inpatients). This paper will discuss the prevalence rates derived from these diverse studies. This discussion will summarize what is known about the extent of alcohol abuse among the elderly. The conclusion of this paper states that the true prevalence of elderly alcohol abuse remains uncertain. This is because the current diagnostic tools are not sensitive to aging and generational effects. Nevertheless, the conclusion is that elderly alcohol abuse is likely a significant problem.

### Methodological Problems

The studies reviewed in this section share a number of significant methodological problems. These problems make it quite difficult to accurately assess the prevalence of alcohol abuse among the elderly. These methodological problems are discussed below before reviewing the studies. This will inform the reader of the limitations of the research in this area of study.

There is a basic methodological flaw in the design of most of the research in the area of alcohol abuse among the elderly. It is the implicit assumption that older and younger subjects can be compared unequivocally on measures of alcohol abuse. This section deals with four problems related to this assumption. Three of these problems lead to a systematic bias resulting in an underestimation of the prevalence of alcohol abuse among the aged.

First, the assessment tools used for diagnosis of alcoholism have not been specifically normed for elderly subjects. The research in this area contains the implicit assumption that the criteria for determining a diagnosis of alcoholism applies unequivocally to the aged. For the most part, these criteria were developed by studying younger adults only. This assumption is unfounded until conclusive research produces confirming empirical evidence. This assumption is probably inappropriate in light of what is known about the aging process. Wood (1978) discussed the criteria for diagnosis of alcoholism published by the National Council of Alcoholism in 1972. He pointed out that "many of the physiological and clinical symptoms and the behavioral and psychological symptoms... occur frequently in elderly individuals who do not have a drinking problem" (p. 103). This could lead to false positives (diagnosing as alcoholics those with normal symptoms of aging and no alcohol problems). This would result in an overestimation of prevalence rates of alcohol abuse among the elderly.

On the other hand, the reverse could lead to false negatives (failing to diagnose

alcoholism due to the assumption that the symptoms can be accounted for by the effects of normal aging). One example of this, according to Graham (1986), is interpreting dependence symptoms as normal symptoms of aging. Shakiness is one such physiological symptom used as a criterion for a diagnosis of alcoholism. Shakiness due to alcoholism is sometimes mistaken as shakiness secondary to aging. It is also possible for researchers to interpret shakiness among the elderly as a side-effect of prescription drugs. Tolerance to alcohol is a second important symptom of alcohol abuse that researchers may attribute to the aging process. This increases the risk of false negatives. A second example of this tendency toward false negatives involves tolerance to alcohol. Regular alcohol consumption generally results in an increased tolerance to alcohol. Graham (1986, p. 324) hypothesized that an elderly drinker's decreasing tolerance to alcohol because of aging may mask an otherwise increasing tolerance level. This means that an elderly drinker who is actually abusing alcohol might not fit the criteria of developing a tolerance to alcohol. This is because the older drinker is progressively unable to metabolize alcohol at the same rate as in his youth due to the aging process. The net result is that the older drinker could honestly say that his tolerance level is not increasing even though he is abusing alcohol. Assessment tools using tolerance as a criterion would likely fail to diagnose geriatric alcohol abusers in greater numbers than younger age groups. This is because the criteria are not adjusted for developmental changes.

Therefore, the first problem is that comparing young and old subjects is confounded. The researchers have not designed the assessment criteria to discriminate between symptoms of alcoholism, aging, and prescription drug reactions.

Second, quantity and frequency measures rely upon the erroneous assumption that the same amount of alcohol equally affects young and old persons. These measures assess the amount of alcohol consumed and the frequency of drinking occasions. Wood (1978) concluded that it takes less alcohol to produce an effect in an elderly person when compared

to a younger individual. An earlier study by Vestal, McGuire, Tobin et al (1977) demonstrated that ethanol (alcohol) levels in blood water content increased significantly with age. Ethanol levels rose from a mean of 140 mg/dl in 20 year old subjects to 180 mg/dl in 80 year old subjects. Both age groups were given equivalent amounts of ethanol based upon body surface area (which declines significantly with age). Wood explained the meaning of this by saying "even though the elderly individual may consume a smaller amount of alcohol than is generally associated with alcohol abuse, the amount reported may well be excessive because of the augmented effect of alcohol for the elderly" (Hartford and Samarojski, 1982, p. 107). Therefore, empirical studies that compare young and old subjects in terms of frequency of drinking and/or the amount consumed are likely underestimating the degree of alcohol abuse among the elderly.

Third, quantity-frequency measures usually rely upon self-report. There are four ways in which self-report leads to unreliable diagnoses of alcohol abuse among the elderly. First, Graham (1986) cited a study suggesting that self-reports on the part of the elderly may be inaccurate due to stronger denial about alcohol abuse in this group (p. 323). This would result in an underestimation of prevalence based upon self-report. Second, compared to younger generations, the elderly population is not generally as accurate at short-term recall of recent alcohol consumption. Third, the aged may not be as accurate as younger people at the mental averaging required to answer survey questions about frequency of use and average consumption. Fourth, impairments in memory and concentration due to the effects of prescribed drugs are more likely among the elderly than among young people. The aged are often prescribed one or more medications. Krupka and Vener (1979) stated that the average older person takes four over-the-counter or prescription drugs each day. See Hartford and Samorajski, 1982, for a discussion of interactions of alcohol with prescription drugs in the elderly population. These latter three problems with self-report among the aged could result in either over- or underestimation of

prevalence rates. However, the stronger denial among the elderly more likely works to produce a systematic underestimation. Therefore, we can make two conclusions about self-reporting. First, self-report of alcohol consumption by the elderly is likely less accurate than that of younger people. Second, self-report probably leads to a systematic underestimation of prevalence rates.

Fourth, many of the assessment instruments require the presence of social or legal problems resulting from alcohol intake for a subject to score in the range of alcohol abuse. Many of the factors which form the criteria for social or legal problems fit better with young males than with the elderly population. For instance, "problems at work due to drinking" is not likely to apply to a retired person. Likewise, "driving under the influence arrests" are not likely for the aged who no longer drive. Failure of elderly drinkers to fit these criteria would lead to an underestimation of prevalence rates.

Before examining the empirical literature itself, it is necessary to discuss two additional problems that make it difficult to compare and contrast prevalence rates derived from the studies in this area. First, there is no consistency among the studies as to a definition of alcoholism or alcohol abuse. It is difficult to compare a study finding a 10 percent rate of "problem drinking" with another study finding a 12 percent rate of "heavy drinking." This is strikingly apparent when the researchers use different criteria to define their terms for alcohol abuse. Some use the criterion of two or more alcoholic drinks per day, while others use drinking excessively at least three times in the last month. This particular lack of consistency regarding definition of alcohol abuse applies equally to studies involving young and old subjects. It is not unique to research involving the elderly. Second, the studies reviewed in this paper use entirely different measures of alcohol abuse. Some researchers rely solely on the report of coordinators of community service centers for estimates of the number of alcohol abusers who are among their clientele. Other researchers rely on self-report surveys of the elderly themselves. Comparing the

prevalence rates derived from these two studies might be equivalent to comparing apples and oranges. Mayer (1979) summed up the problem when she said, "Existing data tend to offer limited comparability so that it is difficult, if not impossible, to prepare a cohesive and comprehensive overview of alcoholism among the aged" (p. 129). This difficulty makes accurate comparison difficult. However, this paper will tentatively compare and contrast the empirical articles in order to attempt to understand what is currently known about alcohol abuse among the elderly.

### Research Findings

Researchers have attempted to estimate the prevalence of alcohol abuse among the elderly by studying three elder groups from among the general population. First, there are a number of studies that survey the "normal," non-patient elderly population. Second, other studies focus upon the geriatric population receiving some form of outpatient assistance from social service agencies. Third, the elderly who are in residential facilities, typically psychiatric hospitals, comprise a distinct population which has been studied by researchers in this area. This paper will discuss the literature within these three categories.

#### Non-patient Geriatric Population

The research on alcohol abuse among elderly people living in the community relies heavily upon self-report. The prevalence rates reported in this literature do not deal with alcoholism per se. Rather, the typical study in this section discusses "heavy drinking" which varies from study to study in terms of definition. This author assumes that heavy drinkers are probably abusing alcohol. They are not necessarily to be thought of as alcoholics. This seems consistent with the implicit definitions of heavy drinking used by the researchers in this field of study.

Only one of the seven studies examined in this section involve a national sample. The other studies focus their research on a particular community or area of the United States. Interestingly, three of the four studies were located on the East coast. The

researchers derived their samples from the Boston area. The two remaining studies acquired subjects from the southwestern United States. It is difficult to observe community-specific trends in this collection of seven studies. However, it is important to be aware of the potential differences between these samples and the general population.

Cahalan (1970) completed a national survey of 1,359 adults in the continental United States using trained laymen to conduct in-depth, personal interviews. Cahalan's sample was representative of the general population of the United States (those living in private residences). The author studied problems associated with consumption of alcohol, rather than alcoholism. Cahalan described a subgroup of "problem-drinkers" that he referred to as having obtained a "current problems score" of seven or more (defined on p. 36). This subgroup seems roughly equivalent to "alcoholics" described in other studies. The similar descriptions of alcohol-related symptoms led to this assumption. In terms of the elderly subjects, Cahalan found that 12 percent of the men in their sixties ( $n=100$ ) reported seven or more current problems due to drinking. Only one percent of men 70 or older and women in their sixties were in the 7+ category. The subgroup with the smallest proportion of subjects represented in the 7+ category--one-half of one percent--was women 70 years of age and older. Cahalan concluded that the prevalence rates were "consistent with past studies that suggest that the proportion of alcoholics among the elderly is very small" (p. 137). This statement is true for three of the elderly subgroups, but overlooks the fact that 12 percent of the men in their sixties--a significant minority--reported seven or more current problems related to drinking.

Cahalan stated that the self-report method (discussed in the previous section) utilized in his study likely understated the prevalence of alcohol abuse, rather than the reverse (p. 33). Another factor that may have affected Cahalan's results is that the study does not include institutionalized or transient individuals. This means the sample excluded the elderly in hospitals, nursing homes, and other non-household residences. These

subgroups likely include elderly alcoholics in higher numbers than Cahalan's sample. This critique applies to the other studies reviewed in this section, as well. This probably resulted in lower overall prevalence rates when the studies were limited to samples composed of non-patient elderly.

Glynn, Bouchard, LoCastro, and Laird (1985) studied elderly abuse of alcohol using a 1973 longitudinal study of 1,859 males born between 1892 and 1945. They completed the nine-year follow-up to the original study in 1982. It consisted of a sample of 1,713 respondents from the original sample. Table 2 summarizes the results of this study. The subjects were volunteers from the Boston community with excellent health records. They were of slightly higher social class levels than the general population of Boston. The researchers used mailed questionnaires to collect the data.

Table 2. Percentages of men reporting drinking problems and average daily consumption of three or more alcoholic drinks (1,859 respondents in 1973; 1,713 respondents in 1982). [from Glynn et al., p. 1416]

| Birth Year | Percent Reporting in 1973 |                   |                              | Percent Reporting in 1982 |                   |                              |
|------------|---------------------------|-------------------|------------------------------|---------------------------|-------------------|------------------------------|
|            | N                         | Drinking Problems | Average 3 or More Drinks/Day | N                         | Drinking Problems | Average 3 or More Drinks/Day |
| 1892-1900  | 33                        | 3.0 %             | 12.1 %                       | 17                        | 0.0 %             | 5.9 %                        |
| 1901-1909  | 95                        | 4.2               | 11.6                         | 76                        | 2.6               | 5.2                          |
| 1910-1918  | 357                       | 5.9               | 11.5                         | 337                       | 7.4               | 13.1                         |
| 1919-1927  | 706                       | 9.8               | 12.0                         | 683                       | 9.7               | 12.6                         |
| 1928-1936  | 562                       | 16.2              | 17.4                         | 503                       | 17.5              | 16.7                         |
| 1937-1945  | 106                       | 19.8              | 17.9                         | 97                        | 18.6              | 15.5                         |

The stated goal of the authors was to "examine whether average alcohol consumption and rates of problems with drinking decline with age or whether differences between generations are likely attributable to historical effects on socialization" (p. 1413). There are a number of interesting aspects to this study. However, this discussion will focus upon prevalence of alcohol abuse among the elderly.

The researchers classified the participants into six birth cohorts (groupings by birth-year), each spanning nine years. Glynn, et al. compared the responses of the birth cohorts in the 1973 and 1982 studies. They compared the percentage of subjects who reported they had drinking problems and those stating that their average daily consumption of alcohol was three or more drinks. This paper will assume that three or more drinks daily is equivalent to abuse of alcohol. There were four birth cohorts in the 1982 study whose members were 55 and older (those born in 1927 or earlier). The percentage of respondents who reported average daily consumption of three or more drinks ranged from 5.2 to 13.1. Of the three birth cohorts in the 1973 study with elderly respondents, 11.5 to 12.1 percent reported consumption of three or more drinks daily. Prevalence rates greater than 11 percent were found in five of the seven birth cohorts containing elderly men. These rates suggest that this study supports the thesis that alcohol abuse is likely a significant problem among the elderly.

One variable that makes these prevalence rates difficult to accurately interpret is the mortality factor. Mortality refers to the general rule that heavy drinkers die younger than light- or non-drinkers. Ignoring this factor could lead one to hypothesize that the aged abuse alcohol at a much lower rate than younger groups. However, the between-age-group comparisons may be confounded with subject mortality. The percentages across age-groups may be decreased because some heavy drinkers have died.

Meyers, Goldman, Hingson, and Scotch (1981) surveyed a sample representative of the general population of Boston residents as the first phase of a longitudinal study. One aspect of the survey involved self-reported alcohol consumption. The authors classified the subjects who reported the most alcohol consumption under the heading "more than two drinks daily." This group seems equivalent to the category referred to as "heavy drinkers" in other studies.

The geriatric subjects (n=928) represented 17 percent of the total sample in this

study. Of these 928, six percent ( $n=55$ ) reported consumption of more than two alcoholic drinks daily. Thirty-seven elderly subjects (4 percent of the geriatric sample) reported a previous problem with drinking that was resolved prior to the administration of the survey. Only nine elderly subjects (less than one percent) reported drinking problems at the time of the survey.

The reported rate of heavy drinking of six percent may be an underestimation of the problem in this sample for two reasons. First, denial and under-reporting is likely due to the fact that the data relies upon the self-report method. It was stated previously that this problem affects most of the studies in this paper. Second, the authors admit that there may be significant differences between the respondents (60 percent of the eligible adults contacted) and those who refused to participate in the survey. Those who did not participate in the survey were older. Twenty-one percent were over 65 compared to only 11 percent of study participants. In addition, the non-participants had a higher incidence of daily drinking. Twenty-three percent were daily drinkers compared to 13 percent of the study participants. Therefore, the statistics obtained would be an underestimation of the problem.

Harford and Mills (1978) published a study that included 794 adult subjects living in metropolitan Boston. The statistics published by Harford and Mills are mean scores of males and females in broad age groups. Despite this limitation, the statistics offer some information regarding the drinking patterns of the subjects. The results indicate that males 63 years old and over ( $n=45$ ) drank alcohol an average of 16 days per month. These same men drank approximately 2-1/2 drinks per occasion. Females 63 years old and over ( $n=41$ ) reported consumption of alcohol 11 days out of the month. They drank about two drinks per occasion.

The major problem with presenting the mean scores is that the reader does not know the distribution of abstinent, light, moderate, and heavy drinkers. That is, the mean

score is not an adequate summary statistic for the shape of the distribution. Taking this limitation into consideration, we can infer that there are many elderly men in this sample that are heavy social drinkers or a fair percentage that are seriously abusing alcohol. Both of these interpretations of the statistics may be accurate, since studies such as Cahalan (1970) suggest a high incidence of abstainers among the elderly. In order to find such a high mean frequency and quantity when the sample includes a high number of abstainers, a large number of heavy drinkers must be a part of the sample.

Celentano and McQueen (1978) studied a sample of 2,762 persons systematically selected to represent the adult population of Washington County, Maryland. Geriatric subjects (those 60 years of age and older) made up 17.6 percent of the sample ( $n=487$ ). The authors sought to evaluate commonly used alcoholism prevalence estimators with this population "in order to assess the degree of convergence of the various rates" (p. 422). They found that the prevalence rates of alcoholism in a single population vary significantly depending upon which estimator is used. While this points to a major problem in comparing studies of prevalence, the statistics provided by some of the estimators used in this study are still informative for the purposes of this paper.

Celentano and McQueen derived some fairly high prevalence rates for heavy drinking among the elderly subjects using their Q-F (quantity-frequency) scale (see Table 3). The heavy drinkers represented 20.6 percent of the males in the 60 to 69 age group. They represented 16.7 percent of the males 70 or older. There were fewer heavy drinkers among the female subjects. In the 60 to 69 year old female group there were 9.5 percent and only 4.3 percent among those 70 or older. These statistics suggest that there is a significant minority of the elderly population who are likely heavy drinkers.

The authors presented statistics based on a measure of loss of control that excluded abstainers. The drinkers represented 214 of the 487 geriatric subjects. Simple subtraction indicates that the loss of control statistics did not include 273 abstainers (about 58 percent

of the geriatric sample). Table 3 shows that the researchers classified 10.3 percent of male drinkers 60 to 69 years of age as heavy drinkers. There were 6.7 percent categorized as such in the 70+ group. Heavy drinkers among females in their sixties were non-existent, while there were 11.4 percent among females 70 or older. These percentages would be much lower if the sample included the large group of abstainers. Therefore, if the samples had been identical for both the Q-F scale and the Loss of Control measure, the percentages of heavy drinkers would diverge even more than Table 3 indicates. This study shows that prevalence rates vary depending on which estimator the researcher used. Despite these variations, Celentano and McQueen present statistics that indicate that alcohol abuse among some elderly subgroups is a significant problem.

Table 3. Percentage of heavy drinkers by sex and age based on results from a Q-F scale and a Loss of Control measure (the latter excluded abstainers). [from Celentano and McQueen, 1978]

|                         |         | Age 60-69 | Age 70+ |
|-------------------------|---------|-----------|---------|
| Q-F Scale               | Males   | 20.6%     | 16.7%   |
|                         | Females | 9.5       | 4.3     |
| Loss of Control measure | Males   | 10.3      | 6.7     |
|                         | Females | 0.0       | 11.4    |

Christopherson, Escher, and Bainton (1984) conducted a study of the elderly living in rural Arizona. The sample consisted of 444 subjects who were at least 65 years of age. There were 219 women and 225 men. The authors gathered the data by conducting personal interviews with each subject. They examined the reasons subjects typically drink and the extent of their past and present alcohol consumption. The authors concluded that "based on this cross-sectional sample, the rural elderly appear to have relatively few alcohol-related problems" (p. 422). They suggested that this population may be at relatively low risk for alcohol-related problems compared to other groups. Other groups might include the urban elderly, the elderly in retirement communities, and the aged from

high-risk ethnic groups.

Contrary to the authors' conclusion that this sample of elderly have few alcohol-related problems, their results reveal that one-third (33.6%) of their elderly sample was classified as "heavy drinkers" (see Table 2 on p. 419). The authors define heavy drinkers as those who drink "at least once a week and at least three drinks per occasion." It seems likely that elderly individuals who drink three or more alcoholic drinks at one sitting with any frequency will be at high-risk for alcohol abuse. The authors classified an additional 40.5 percent of their sample "moderate drinkers." The moderate drinker is one who "drinks several times a month but not as often as once a week regardless of the quantity per occasion, or drinks as frequently as several times a day but never more than two drinks per occasion" (p. 418). Given this definition, it is possible that periodic alcoholics and subjects who go on occasional alcoholic binges might be classified as moderate drinkers by the authors. It is not possible to derive exact prevalence rates from this study. However, it seems probable that a high number of the 33.6 percent heavy drinkers and at least some of the 40.5 percent moderate drinkers are elderly alcohol abusers.

Goodwin, Sanchez, Thomas, Hunt, Garry, and Goodwin (1987) published a study of healthy, independent-living individuals over age 65. The 270 subjects ranged in age from 65 to 89 with a mean age of 74. They were living independently in an urban community in the southwestern United States. All participants were volunteers in a longitudinal study of the aging process begun in 1979. Screening involved accepting only those subjects who were taking no regular medication and had no chronic medical illnesses. Alcohol abusers have a high rate of medical problems secondary to the abuse of alcohol. Therefore, the screening probably kept alcohol abusers out the sample at a disproportionate rate. The authors relied upon self-report to determine present and past weekly rates of consumption of beer, wine, and distilled spirits. The authors correlated the subjects' estimates of present alcohol consumption with a detailed diet record (again dependent upon

self-report). They used the diet record to verify the actual intake of alcohol. This detailed diet record covered a period of three days in the middle of the week. There was a strong correlation ( $r=.88$ ) between the two measures. This suggests that the subjects' estimates of alcohol consumption were consistent.

The authors classified eight percent of the total sample as heavy drinkers. They defined heavy drinkers as those who drank more than 30 grams of alcohol per day. This quantity is roughly equivalent to 2-1/3 standard alcoholic drinks.

A number of biases exist in this study that likely result in a systematic underestimation of the problem of alcohol abuse in this elderly sample. First, institutionalized or dependent seniors are more likely to be abstainers or alcohol abusers in treatment. Excluding these groups resulted in a sample with a disproportionate number of moderate drinkers. Second, the three day diet record obtained in the middle of the week was not sensitive to weekend social drinkers or binge drinkers who drink only on weekends. Third, the selection criteria requiring "healthy" subjects excluded most alcoholics. This leads to probable underestimation of the prevalence of alcohol abuse among this group of elderly.

This section has focused on the empirical studies dealing with the prevalence of alcohol abuse among the non-patient elderly. The prevalence rates reported in these studies vary widely. Table 4 summarizes these diverse studies. The prevalence of heavy drinkers reported in these studies range from zero to 33.6 percent. As discussed earlier in the paper, these prevalence rates are difficult to compare since the researchers used different estimators and classify abusive drinking differently. Nevertheless, a careful examination of the statistics presented in these studies leads to the conclusion that there is a high probability of alcohol abuse among the elderly. Also, it is a significant problem in at least some subgroups of the elderly population.

Table 4. Summary of prevalence rates of alcohol abuse among the non-patient elderly.

| Study                         | Sample                             | Site of Data Collection             | Findings (Prevalence Rates)                                                                                                                                                                                                                                |  |     |      |      |       |     |     |    |        |       |    |     |        |
|-------------------------------|------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----|------|------|-------|-----|-----|----|--------|-------|----|-----|--------|
| Cahalan (1970)                | 1359 adults residing in households | Continental U.S.                    | <table><tr><td></td><td>Age</td><td>Rate</td></tr><tr><td rowspan="2">Men:</td><td>60-69</td><td>12%</td></tr><tr><td>70+</td><td>1%</td></tr><tr><td rowspan="2">Women:</td><td>60-69</td><td>1%</td></tr><tr><td>70+</td><td>&lt; 0.5%</td></tr></table> |  | Age | Rate | Men: | 60-69 | 12% | 70+ | 1% | Women: | 60-69 | 1% | 70+ | < 0.5% |
|                               | Age                                | Rate                                |                                                                                                                                                                                                                                                            |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Men:                          | 60-69                              | 12%                                 |                                                                                                                                                                                                                                                            |  |     |      |      |       |     |     |    |        |       |    |     |        |
|                               | 70+                                | 1%                                  |                                                                                                                                                                                                                                                            |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Women:                        | 60-69                              | 1%                                  |                                                                                                                                                                                                                                                            |  |     |      |      |       |     |     |    |        |       |    |     |        |
|                               | 70+                                | < 0.5%                              |                                                                                                                                                                                                                                                            |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Glynn et al. (1985)           | 1859 males residing in community   | Boston, MA                          | 5.2% to 13.1% of the 55+ group drink 3 or more alcoholic drinks daily                                                                                                                                                                                      |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Meyers et al. (1981)          | 928 adults residing in community   | Boston, MA                          | 6% of subjects 55 and older drink more than 2 drinks daily (equivalent to "heavy drinkers")                                                                                                                                                                |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Harford and Mills (1978)      | 794 adults residing in community   | Metropolitan Boston, MA             | Men (age 63+): Drink 16 days/month; 2-1/2 drinks/occasion<br>Women (age 63+): Drink 11 days/month; 2 drinks/occasion                                                                                                                                       |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Celentano & McQueen (1978)    | 2762 adults residing in community  | Washington County, Maryland         | Two measures of heavy drinking produced range:<br>Males: 6.7 - 20.6 %<br>Females: 0.0 - 11.4 %                                                                                                                                                             |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Christopher-son et al. (1984) | 444 adults 65+ living in community | Rural Arizona                       | Heavy drinkers = 33.6%                                                                                                                                                                                                                                     |  |     |      |      |       |     |     |    |        |       |    |     |        |
| Goodwin et al. (1987)         | 270 elders living independently    | Urban area of the southwestern U.S. | Heavy drinkers = 8%                                                                                                                                                                                                                                        |  |     |      |      |       |     |     |    |        |       |    |     |        |

#### Outpatient Geriatric Population

The samples dealt with in the five studies reviewed in this section are quite diverse. Two of the studies deal with samples of elderly subjects who attended outpatient clinics. One surveyed elderly people serviced by social service agencies. The final two studies reported results of surveys of administrators of agencies that service the elderly. The administrators assessed the prevalence of alcohol abuse among their clientele. The

samples from four of the five studies came from the midwest portion of the United States. The final study focused on subjects in a suburban county in New York.

Hubbard, Santos, and Santos (1979) studied the prevalence of alcohol-related problems in a sample of 250 cases referred to a geriatric outreach program. The program is on the campus of the University of Notre Dame in South Bend, Indiana. The authors studied case reports and interviewed family, friends, and other agencies involved with the subjects. Thirty-two of the subjects were diagnosed alcoholic (20 chronic long-term alcoholics; 12 late-onset alcoholics). This represents 12.8 percent of the sample.

Hubbard et al. omitted a few important details in their write-up of this study. First, the authors did not include information about their selection criteria. What led to these particular subjects being referred to this outreach program? How are they different from or similar to the general population? How were the 250 cases selected from among all of the referrals? Second, Hubbard et al. do not specify the criteria used to determine a diagnosis of alcoholism. Did they use one of standard formulas for determining a diagnosis of alcoholism? Did they devise their own criteria? The 12.8 percent prevalence rate is similar to rates found in other studies of the outpatient geriatric population (see other studies reviewed below). However, these unanswered questions lead to doubt concerning the reliability of the study.

Zimberg (1974) referred to his unpublished study of a suburban county in New York. He studied the admissions to a community mental health center during the first six months of 1972. Of the 1,636 subjects, 87 patients were 65 years of age or older. Zimberg diagnosed alcohol abuse in 17 percent (15 out of 87 ) of these elderly patients.

Brown and Chiang (1983) studied an elderly sample that consisted of 21 outpatients enrolled in substance abuse programs, 155 medical outpatients, and 30 non-patients. The authors' combined the latter two groups in their presentation of the results. Brown and Chiang reported that the rationale for doing so was that "analyses failed to reveal

appreciable differences between the two groups on any of the variables of interest in the present study" (p. 4). The researchers imply that the "variables of interest" are sex, age, marital status, living arrangements, and alcohol and medication abuse. A substance abuse prevalence rate of 14 percent ( $n=30$ ) was found in the combined group of 185 elderly subjects not involved in treatment for substance abuse. The method employed to gather the data was a combination of self-report and interviewer assessment.

One problem with Brown and Chiang's study is the exclusion of 33 additional subjects from the combined group. The authors explained that the interviewers could not make a definitive assessment regarding possible alcohol or medication abuse in these 33 cases. This raises a question about the criteria used to diagnose substance abuse. If the interviewers had difficulty making a diagnosis in 33 cases, how can the reader have faith in the criteria used to diagnose the other 185 cases? The authors do not provide information about differences between the group of excluded subjects and the 185 in the combined group. It is possible that the 33 excluded subjects have a higher (or lower) rate of substance abuse than the 14 percent rate found in the combined group. Exclusion of the 33 undiagnosed subjects could bias the results, though it is difficult to predict the direction of this bias.

A second factor decreases the usefulness of Brown and Chiang's study. The 14 percent rate includes both the alcohol and medication abusing elderly. The authors' do not specify how many subjects abuse both alcohol and medications, alcohol alone, or medications alone. The scope of this paper includes only the first two groups. The possible inclusion of subjects who only abuse medications in the 14 percent prevalence rate incorrectly represents the degree of alcohol abuse among the elderly subjects. Therefore, it is possible that the 14 percent rate is high. Nevertheless, this study suggests that alcohol abuse may affect a significant number of elderly people.

Brown (1982) interviewed the chief administrators of 34 agencies in Dane County,

Wisconsin providing professional services to people 55 years old and above. Brown completed thirty interviews which he described as semistructured. He asked the administrators to determine the percentage of their older clientele (55 or older) who were abusing alcohol and/or drugs. Most of these administrators were not professionally trained to diagnose substance abuse problems. However, Brown encouraged them to calculate a percentage based upon their level of awareness.

The results are an unreliable estimate of the incidence of substance abuse among the elderly in Dane County. They are rendered unreliable by the subjective nature of the method employed. The estimated prevalence rates ranged from one to 100 percent. Six substance abuse treatment agencies reported a 100 percent rate of substance abuse among their elderly clientele. The prevalence rates reported by the other 24 agencies ranged from one to 50 percent with a mean of 16 percent. Some of the agencies that reported high prevalence rates included a crisis counseling agency (50 percent), the city police department (50 percent), a veteran's hospital (45 percent), county social services (33 percent), and public health nurses (25 percent). Overall, 13 of the 24 agencies reported at least a 10 percent rate of substance abuse among the geriatric population they served. The majority of chief administrators of agencies in contact with older adults in Dane County, Wisconsin seem to view the abuse of alcohol and drugs as a significant problem for this population.

Kola, Kosberg, and Joyce (1984) utilized a research design quite similar to that of Brown (1982). The authors surveyed 88 nutrition and/or social service programs for the elderly in five counties around Cleveland, Ohio. Their objective was to determine their representatives' views regarding the problem of alcoholism among the aged. Forty-seven agencies responded to the survey. These agencies served an estimated 11,000 clients. Less than one percent were identified as having an alcohol problem. This is a much lower estimated prevalence rate than that reported by Brown (1982), even though the data was obtained by a similar method. The authors caution that these figures are not reliable

estimates of the incidence of alcohol problems in this elderly sample due to poor record-keeping practices. As an example, only nine of the 47 agencies relied upon written records to respond to this part of the survey. The authors state that they believe these statistics may underestimate the true prevalence of alcohol abuse among the elderly in this five-county area (p. 518).

There is a wide range of prevalence rates in the five studies reviewed in this section. Table 5 summarizes these studies of elderly outpatients. Four of the five studies present prevalence rates in the teens (12.8, 14, 16, and 17 percent). These prevalence rates indicate that alcohol abuse is a significant problem in these samples. The fifth study (Kola et al.) indicates a very low rate of alcohol abuse among the aged. Except for Kola et al., the current research suggests that alcohol abuse in the elderly outpatient population is a significant problem.

The problems associated with self-report by elderly subjects are avoided by all of the studies in this section except for Brown and Chiang (1983). The major problem this avoids is the systematic underestimation that probably results from reliance upon self-report of alcohol consumption by the aged. However, the prevalence rates are not necessarily more accurate than those based upon self-report.

#### Hospitalized Geriatric Population

The three studies in this section deal with the incidence of alcohol abuse among the elderly in psychiatric hospitals. Two of these studies drew their subjects from hospitals in the United States (located in San Francisco, California and Houston, Texas). There was a high incidence of alcohol abuse in both of these samples. The third study reviewed in this section was based in Brisbane, Australia. There was a low incidence of alcohol abuse in this study.

Simon, Epstein, and Reynolds (1968) studied first-time psychiatric admissions to San Francisco General Hospital during 1959. There were four prerequisites met by all

Table 5. Summary of prevalence rates of alcohol abuse among the outpatient elderly.

| Study                 | Sample                                                                                              | Site of Data Collection                   | Findings (Prevalence Rates)                                                                            |
|-----------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Hubbard et al. (1979) | 250 elderly outpatients                                                                             | South Bend, Indiana (Univ. of Notre Dame) | 12.8% diagnosed alcoholics                                                                             |
| Zimberg (1974)        | 1636 outpatient admissions to a community mental health center                                      | A suburban county in New York             | 17% of elderly patients (n=87) diagnosed as alcohol abusers                                            |
| Brown & Chiang (1983) | 185 elderly in the community (30 nonpatient, 155 receiving assistance from social service agencies) | Metropolitan area around Madison, WI      | 14% diagnosed as substance abusers                                                                     |
| Brown (1982)          | Chief administrators of 34 organizations serving elders                                             | Dane County, WI                           | Of non-substance abuse treatment agencies (n=24), rates estimated between 1 and 50% with a mean of 16% |
| Kola et al. (1984)    | 47 nutrition and/or social service programs serving 11,000 elderly                                  | Five counties in the Cleveland, Ohio area | Less than 1% diagnosed with alcohol problems                                                           |

subjects. First, they were at least 60 years of age at the time of admission. Second they were San Francisco residents for at least one year. Third, they had no history of arrests before age 60. Fourth, they had not been hospitalized before the age of 60. There were 534 patients that met these criteria. Twenty-three percent (n=122) were diagnosed alcoholics. An additional five percent were labelled heavy social drinkers. The authors admit that their findings suggest a prevalence rate that is high compared to earlier studies. However, they cited one study with a prevalence rate of 20 percent. Simon et al. suggested one possible explanation for these higher-than-usual rates. They included patients who

received a secondary or tertiary diagnosis of alcoholism. The authors wanted to isolate all psychogeriatric patients who were alcoholics. They were unconcerned about whether or not alcoholism was their primary diagnosis. There is a possibility that earlier studies only included patients with a primary diagnosis of alcoholism. Thus, the 23 percent prevalence rate found in the patients studied by Simon et al. may appear high because earlier studies excluded alcoholics included in this study.

Another way of looking at the rate of alcohol abuse in the Simon et al. sample is to exclude the abstainers and focus on the drinkers. There was a high number of abstainers (43 percent) in the original sample of 534 patients. Over 47 percent of the drinkers were diagnosed alcoholics. This study indicates that as many as one of every two psychogeriatric patients who drink abuse alcohol. This is an alarming rate of alcohol abuse. This rate will remain an estimate until future studies either support or discredit its accuracy.

Gaitz and Baer (1971) studied 100 consecutive elderly admissions to a county psychiatric ward in Houston, Texas. Forty-eight of these patients had a history of previous psychiatric hospitalizations. Of these 100 patients (all 60 years of age or older), 44 were diagnosed as having some form of alcoholism. Thirty-six were given a primary diagnosis of alcoholism, while the remaining eight were given a secondary diagnosis of alcoholism. Most of the 44 alcoholics had a long history of drinking problems, but five were classified as late-onset alcoholics (referring to alcohol abuse that began after the age of 50). The 44 percent rate of alcohol abuse found in this sample of psychogeriatric patients is significantly higher than the 23 percent rate found by Simon et al. (1968).

Brown (1982), which was reviewed earlier in this paper, cites prevalence rates that are strikingly similar to those found by Simon et al. (1968) and Gaitz and Baer (1971). Brown reported that the chief administrator of a psychogeriatric unit in Dane County, Wisconsin, assessed that 20 percent of the older patients (55 and above) were abusing

alcohol and/or drugs. This is similar to the rate of 23 percent cited by Simon et al. Brown also reported the estimate of the chief administrator of a veterans hospital. The estimated prevalence rate for this agency was 45 percent. This closely resembles Gaitz and Baer's rate of 44 percent. When all four prevalence rates are considered together, it seems probable that alcohol abuse is a serious problem among the psychogeriatric population.

Daniel (1972) published a study of 693 geriatric patients (358 males, 335 females). They were admitted to a psychiatric hospital in Brisbane, Australia, over a five-year period beginning in July, 1965. Daniel intended to classify the patients into diagnostic groups and compare his classifications with those of Roth (who published a similar study in 1955). Daniel's study did not focus solely upon alcohol abuse, but it generated prevalence rates of geriatric patients admitted with a primary diagnosis of chronic alcoholism or alcoholic psychosis. The subjects were 65 years of age or older. The majority were distributed fairly evenly among the age groups between 65 and 84. A minority of 73 subjects were over the age of 84.

Only 45 of the 693 psychogeriatric subjects received a primary diagnosis of alcoholism, resulting in a 6.2 percent prevalence rate. Twenty-two subjects were diagnosed with chronic alcoholism, while the other 23 were diagnosed alcoholic psychotics. The latter category included patients with alcoholic paranoia, Korsakov's psychosis, and alcoholic dementia. Daniel's alcoholic sample only included subjects with primary diagnoses of alcoholism. This contrasts with Simon et al. (1968) who reported secondary and tertiary diagnoses, as well. Two-thirds of the alcoholics in Daniel's study were in the 65 to 69 age group. None were in the 80 or above age groups. It is difficult to interpret this comparatively low rate of 6.2 percent. It seems to indicate that there is a low incidence of alcohol abuse in the psychogeriatric population. This stands in sharp contrast to Simon et al. (1968) and Gaitz and Baer (1971), who derived high prevalence rates in their elderly psychiatric samples.

Table 6 summarizes the three studies reviewed in this section. The two American studies found high prevalence rates of alcohol abuse in the psychogeriatric samples. The single Australian study by Daniel found a low rate in a similar sample. Despite Daniel's 6.2 percent rate, the three studies taken together indicate that alcohol abuse among the psychogeriatric population is likely much higher than among the non-patient and outpatient populations.

Table 6. Summary of prevalence rates of alcohol abuse among the elderly psychiatric inpatients.

| Study               | Sample                                                | Site of Data Collection | Findings (Prevalence Rates)                                                 |
|---------------------|-------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------|
| Simon et al. (1968) | 534 elderly psychiatric inpatients (first admissions) | San Francisco, CA       | 23 % diagnosed alcoholics                                                   |
| Gaitz & Baer (1971) | 100 elderly (60+) patients in county psychiatric ward | Houston, TX             | 44 % diagnosed alcoholics (36 = primary diagnosis, 8 = secondary diagnosis) |
| Daniel (1972)       | 693 elderly (63+) patients in psychiatric hospital    | Brisbane, Australia     | 6.2 % diagnosed chronic alcoholics or alcoholic psychotics                  |

At this point, we need to discuss a problem related to the psychogeriatric population. It is probable that the elderly in psychiatric hospitals are taking psychotropic medications prescribed for their conditions in greater quantities than the non-hospitalized elderly. Hartford and Samorajski (1982) state that alcohol usually interacts with these medications in a way that exacerbates the effects of both the alcohol and the medications (pp. 22-3). This means that the elderly population at highest risk for alcohol abuse is also the population at highest risk for this interaction between alcohol and other medications.

### Summary and Conclusion

This paper has reviewed the empirical literature pertaining to alcohol abuse among the elderly. It discussed a number of serious methodological problems that effect the validity of the results. The major flaw pointed out was the untested assumption that the elderly are identical to the younger generations in terms of application of the current criteria for assessing alcohol abuse. This erroneous assumption probably leads to a systematic underestimation of alcohol abuse prevalence in the elderly population. It was pointed out that the studies reviewed in this paper are difficult to compare. This is due to the variety of definitions of alcoholism and alcohol problems used by the researchers, as well as the different diagnostic tools employed.

The empirical studies reviewed in this paper revealed prevalence rates that ranged from zero to 44 percent. Three subgroups of the elderly population were the focus of research: 1) the "normal" elderly who resided in the community, 2) the elderly being served by social service agencies (including mental health clinics) on an outpatient basis, and 3) the hospitalized psychogeriatric patients. The researchers primarily surveyed specific communities in different parts of the United States, except for Cahalan's (1970) national sample and Daniel's (1972) Australian sample. Table 7 presents a summary of the 15 studies reviewed in this paper.

One pattern that emerges from this review is the apparent incremental differences in rates of alcohol abuse found in the three subgroups of elderly. These groups are non-patient, outpatient, and psychiatric inpatient. Most of the studies of non-patient samples produced rates at or below 12 percent. The prevalence rates among the outpatient samples clustered in the mid-teen percentages. The rates cited in the research of psychiatric inpatients had a mean of over 20 percent. This distribution of prevalence rates seems logical. It is logical to assume that the group that receives the least professional assistance from the medical, psychological, and service sectors (the non-patients) abuses

Table 7. Summary of prevalence rates of alcohol abuse among the elderly non-patient, outpatient, and psychiatric inpatient samples.

| Study                      | Sample                                                         | Site of Data Collection                   | Findings (Prevalence Rates)                                                                 |              |
|----------------------------|----------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------|--------------|
|                            |                                                                |                                           | Age                                                                                         | Rate         |
| Cahalan (1970)             | 1359 adults residing in households                             | Continental U.S.                          | Men: 60-69                                                                                  | 12%          |
|                            |                                                                |                                           | 70+                                                                                         | 1%           |
|                            |                                                                |                                           | Women: 60-69                                                                                | 1%           |
|                            |                                                                |                                           | 70+                                                                                         | < 0.5%       |
| Glynn et al. (1985)        | 1859 males residing in community                               | Boston, MA                                | 5.2% to 13.1% of the 55+ group drink 3 or more alcoholic drinks daily                       |              |
| Meyers et al. (1981)       | 928 adults residing in community                               | Boston, MA                                | 6% of subjects 55 and older drink more than 2 drinks daily (equivalent to "heavy drinkers") |              |
| Harford and Mills (1978)   | 794 adults residing in community                               | Metropolitan Boston, MA                   | Men (age 63+): Drink 16 days/month; 2-1/2 drinks/occasion                                   |              |
|                            |                                                                |                                           | Women (age 63+): Drink 11 days/month; 2 drinks/occasion                                     |              |
| Celentano & McQueen (1978) | 2762 adults residing in community                              | Washington County, Maryland               | Two measures of heavy drinking produced range:                                              |              |
|                            |                                                                |                                           | Males:                                                                                      | 6.7 - 20.6 % |
|                            |                                                                |                                           | Females:                                                                                    | 0.0 - 11.4 % |
| Christopher et al. (1984)  | 444 adults 65+ living in community                             | Rural Arizona                             | Heavy drinkers = 33.6%                                                                      |              |
| Goodwin et al. (1987)      | 270 elders living independently                                | Urban area of the southwestern U.S.       | Heavy drinkers = 8%                                                                         |              |
| Hubbard et al. (1979)      | 250 elderly outpatients                                        | South Bend, Indiana (Univ. of Notre Dame) | 12.8% diagnosed alcoholics                                                                  |              |
| Zimberg (1974)             | 1636 outpatient admissions to a community mental health center | A suburban county in New York             | 17% of elderly patients (n=87) diagnosed as alcohol abusers                                 |              |

|                       |                                                                                                     |                                           |                                                                                                        |
|-----------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Brown & Chiang (1983) | 185 elderly in the community (30 nonpatient, 155 receiving assistance from social service agencies) | Metropolitan area around Madison, WI      | 14% diagnosed as substance abusers                                                                     |
| Brown (1982)          | Chief administrators of 34 organizations serving elders                                             | Dane County, WI                           | Of non-substance abuse treatment agencies (n=24), rates estimated between 1 and 50% with a mean of 16% |
| Kola et al. (1984)    | 47 nutrition and/or social service programs serving 11,000 elderly                                  | Five counties in the Cleveland, Ohio area | Less than 1% diagnosed with alcohol problems                                                           |
| Simon et al. (1968)   | 534 elderly psychiatric inpatients (first admissions)                                               | San Francisco, CA                         | 23 % diagnosed alcoholics                                                                              |
| Gaitz & Baer (1971)   | 100 elderly (60+) patients in county psychiatric ward                                               | Houston, TX                               | 44 % diagnosed alcoholics (36 = primary diagnosis, 8 = secondary diagnosis)                            |
| Daniel (1972)         | 693 elderly (63+) patients in psychiatric hospital                                                  | Brisbane, Australia                       | 6.2 % diagnosed chronic alcoholics or alcoholic psychotics                                             |

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alcohol the least. The reverse is also logical. The group that receives the most assistance from these professional sectors abuses alcohol the most. This group is the psychiatric inpatients. The outpatient group logically falls somewhere in the middle. They utilize professional assistance more than the non-patients and less than the psychiatric inpatients. There are certainly exceptions to this generalization, but the studies reviewed in this paper appear to substantiate the existence of this pattern. Future studies comparing samples from each of these groups are necessary to establish the empirical validity of this pattern.

The empirical studies in this area systematically overlooked the fact that aging effects were confounded with the problem of alcohol abuse. As mentioned above, the major problem in assessment of alcohol abuse among the elderly is the assumption that the

criteria for diagnosis of alcohol abuse does not change with age. This erroneous assumption has led to the publication of many studies of drinking patterns and prevalence of alcohol abuse. These studies do not inform us about the true rate of alcohol abuse among the elderly. This includes the studies reviewed in this paper. There are many developmental changes throughout the aging process that either hide or imitate the symptoms of alcohol abuse. The result is that the current prevalence rates for alcohol abuse among the aged are rough estimates, at best, or mere guesses, at worst.

It is my opinion that the diagnostic criteria currently used will generally underestimate the rate of alcohol abuse among the elderly. Three factors point to this conclusion. First, growing old produces physiological changes that will not be picked up by standard diagnostic tools. For instance, aging leads to changes in metabolism resulting in smaller amounts of alcohol having a greater effect. This means that two standard drinks per day may be no problem for a 30 year old. However, the body of a 65 year old will likely react to two drinks as if they were three or four. The rate of alcohol abuse among the elderly is likely higher than current estimates suggest. Current diagnostic tools do not make adjustments for this metabolic difference. Another physical factor brought about by aging is the increased use of prescribed medications. Investigators probably fail to differentiate between the effects of medications and symptoms (or the lack of symptoms) of alcohol abuse. Second, aging can lead to an increase in cognitive slippage. This leads to problems with measures that rely upon self-report. Elderly persons who take prescribed medications may incur memory problems as a side-effect of the medications. In general, aging can negatively affect short-term recall and computational skills. Both are required by quantity-frequency measures that rely upon self-report. Third, significant lifestyle changes may occur in response to normal aging. Many elderly people are not involved in the community as much as during their younger years. This results in fewer legal problems associated with criteria that are part of many alcoholism diagnostic tools, such as public

intoxication and driving under the influence. That is, many elderly people who abuse alcohol will be assessed with fewer alcohol-related problems by standard diagnostic tools because their lifestyles are different than younger generations. Few of these changes that occur due to aging are taken into consideration by the diagnostic tools used to assess alcohol abuse. The overall result will probably be a systematic underestimation of the problem. Future studies are needed to validate or invalidate this assumption. Even if it is invalidated, it is certain that current diagnostic tools cannot produce accurate prevalence rates for alcohol abuse among the aged. They are not sensitive to aging effects.

In addition to the aging effects discussed above, generational effects impact the research in this field of study. Three of the studies reviewed in this paper dealt with generational or cohort effects (Glenn, 1981, Glynn et al., 1985 and Meyers et al., 1981). Older people who lived through Prohibition may have different attitudes about drinking compared to Baby Boomers. The elderly who were 12 to 25 years old during Prohibition may also differ from the elderly who were 12 to 25 during World War II in terms of drinking behavior and attitude toward drinking. If generational effects are present, these may be confounded with the problem of alcohol abuse among the aged. For instance, people 75 and older may have a lower rate of alcohol abuse than those 55 to 75 years old. The standard interpretation of this fact is that older people drink less. It may be more accurate to say that people over 75, who lived through Prohibition, drink less than younger age groups. It is possible that the generation born before 1913 will have a higher rate of alcohol abuse than those born after 1913. This is because the latter group was affected by Prohibition and by different values passed down from their elders during their formative years. As with aging effects, the diagnostic tools are not sensitive to generational effects in terms of assessment of alcohol abuse. Suffice it to say that researchers should consider generational effects when attempting to estimate prevalence of alcohol abuse.

In conclusion, the true prevalence of alcohol abuse among the aged remains

uncertain. The diagnostic tools currently used to assess alcohol abuse among the aged are not sensitive to aging and generational effects. As a result, the estimated prevalence rates that exist are no more than approximations. Although trustworthy prevalence rates do not yet exist, it is possible to conclude from the existing empirical studies that alcohol abuse among the aged is likely a significant problem. Researchers need to take steps toward developing diagnostic tools sensitive to the differences between the younger and older generations. A general need in the area of assessment of alcohol abuse is a definition of alcoholism or alcohol abuse agreed upon by the researchers in this field. These are initial steps toward the difficult task of accurately assessing the prevalence of alcohol abuse among the elderly.

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